

# LOW CARBON WEST



## INTRODUCTION

**Low Carbon West** is a transitional strategy for the region encompassed by the municipalities in the Western Alliance for Greenhouse Action (WAGA) to support the growth of this vibrant and diverse region while limiting the increase in greenhouse gas emissions associated with that growth.

The WAGA region is the fastest growing in Australia, and its councils and stakeholders are in a great position to demonstrate national leadership in responding to the threat of climate change. There is an opportunity to combine continued economic growth with improved carbon productivity; that is, reducing the level of carbon emitted for each unit of output across the region.



Melbourne's West will support a growing, vibrant and diverse economy and will achieve this whilst minimising the increase in greenhouse gas emissions associated with the region's growth.

Low Carbon West has been developed by WAGA, with project partners LeadWest and Regional Development Australia Western Melbourne. AECOM and Arup were jointly commissioned as the project consultants and have led the consultation, analysis and strategy development.

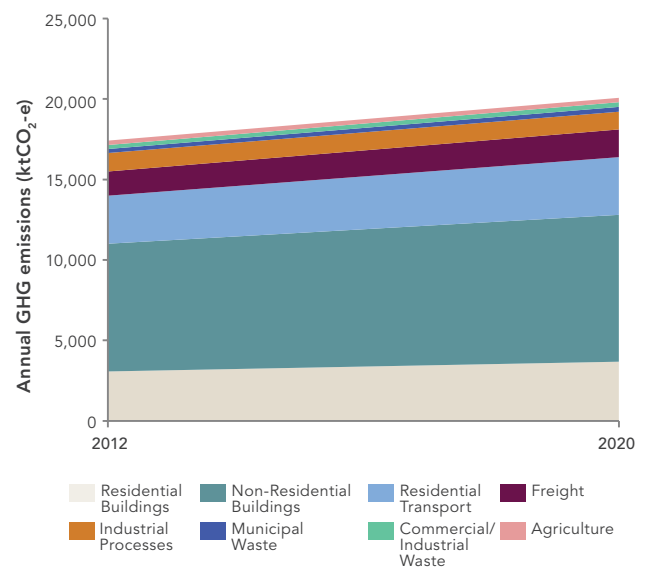
This strategy fulfils the need for action by local government at a regional level and provides the framework for this action to be implemented to reduce greenhouse gas emissions.

The value of a regional approach by local government, in terms of optimising resources, sharing ideas and implementing actions in response to common needs and requirements is increasingly recognised and mirrors the regional outlook of WAGA and co-funders, LeadWest and RDA Western Melbourne.

## THE REGIONS' EMISSIONS

The development of Low Carbon West is underpinned by an understanding of the current greenhouse gas profile of the WAGA region and the projection of these emissions to 2020. The emissions for the WAGA region by sector for 2012 and projected to 2020 are illustrated in the figure below.

In total, the WAGA region produced 17.4 million tonnes of carbon dioxide equivalents (tCO<sub>2</sub>-e) of emissions in 2012. Under a business as usual scenario, this is projected to increase to 20.1 million tCO<sub>2</sub>-e by 2020, representing a regional growth of approximately 15%.



## SECTORS FOR ACTION

A clear need for action is evident at all levels of government to reduce greenhouse gas emissions through the legislative, advocacy, programmatic and leadership levers at their disposal. Low Carbon West defines the means through which the WAGA councils are able to provide their regional contribution to the challenge of emission reductions.

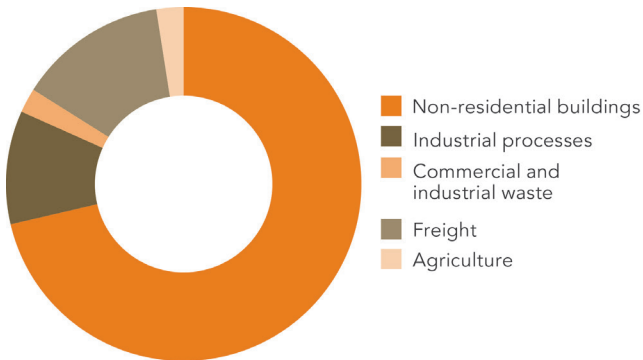
The strategy consists of an overarching report that synthesises the analysis of four sectors; **business and industry, urban growth and development, transporting people and freight** and **communities**. Within these four sectors are 20 actions to be undertaken by the region to assist the transition into a low carbon economy.

The following pages describe the contribution of these actions across each of the four sectors.

## BUSINESS AND INDUSTRY

The WAGA region has a strong manufacturing, logistics and supply chain, freight and distribution base, and will continue to play a vital role in meeting Victoria's industrial and logistics needs. The region is also home to a diverse, knowledge-driven economy, based on the production, distribution and use of knowledge and information.

Total emissions attributed to business and industry (2012) in the WAGA region has been estimated at around 11,100 ktCO<sub>2</sub>-e, or 64% of the region's overall emissions. A large amount of these emissions come from non-residential buildings and more specifically from manufacturing, warehouse, distribution and storage.



In developing the strategy, ten actions were identified for business and industry and can be coordinated through three programs:

1. Reducing business premises emissions
2. Reducing freight emissions
3. Stand-alone energy generation

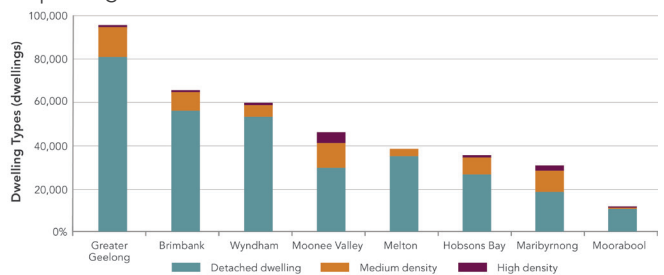
Business and industry action descriptions	Emissions benefit (ktCO <sub>2</sub> -e)
Create bulk-buy schemes for solar PV panels to be installed in non-residential buildings	853
Establish a program for smaller industrial energy users to report on energy use and develop resource efficiency plans, and work with large industry energy users to sign up to voluntary agreements for emissions reductions	813
Facilitate EUAs for renewable and energy efficient plant (for non-residential buildings or facilities)	215
Advocate for Large-scale Renewable Energy Generation in WAGA region (large-scale solar)	257
Fund and facilitate industry training for energy efficiency or building tune-ups	61.3
Conduct mapping of demand for heating and cooling to identify priority areas for low carbon district heating. The heat map will be an enabler for investment in low carbon district generation	76.4
Establish a regional network of freight businesses and implement a voluntary program for freight companies to track and reduce emissions	172
Implement a 'Cool Roofs' program	31.8
Establish a waste-to-energy facility in the region	64.2
Advocate for establishing a freight consolidation centre in the region, specifically the Western Interstate Freight Terminal (WIFT)	-1130*

## COMMUNITIES

The communities sector focuses on actions that reduce emissions in existing residential buildings, residential transport and in municipal waste.

Currently there are around 382,000 dwellings in the WAGA region, many of these being standalone detached houses. Many existing homes do not operate at the same energy performance as new buildings (6-star NatHERS standard), and inefficient homes often lead to higher costs of living through high household energy bills. There is a significant opportunity to reduce the cost of living through energy retrofits for residential housing.

Residents within the region are also highly car-dependent. There is an opportunity to reduce these pressures by supporting alternative forms of transport that are not only less costly for the resident but also reduce emissions. This may be achieved by enabling the use of public transport, or by reducing the emissions from cars through sharing services or carpooling.



These actions can be coordinated through the following three programs:

1. Supporting building retrofits and installations
2. Providing education for waste diversion from landfill
3. Equipping drivers with information to make sustainable choices

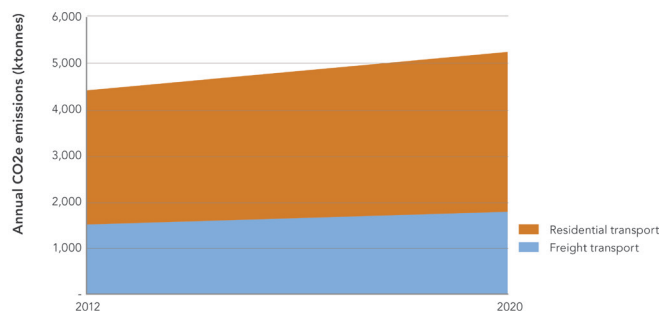
Communities action descriptions	Emissions benefit (ktCO <sub>2</sub> -e)
Promote sustainability measures to the community through the Urban Sustainability Atlas, to identify opportunities for solar PV installations at a proposed location	12.6
Work with real estate agents to make properties more sustainable through retrofits	7.7
Create bulk-buy schemes for energy efficient and renewable technology, such as PV, solar hot water and efficient lighting to reduce the capital cost for individual consumers	8.3
Implement a car-share program, with the potential for either electric or fuel-efficient vehicles.	16.7
Run recycling promotion and education programs, to consolidate and build upon current programs	38.4
Implement organic waste diversion and compost distribution back to households	27.3
Implement a carpool matching program for residents, either online or via development of an app.	10.0
Implement a 'Cool Roofs' program	31.8

## TRANSPORTING PEOPLE AND FREIGHT

Due to an abundance of land, the WAGA region is a strategically suitable location for uses that are land-hungry such as airports (Tullamarine, Essendon and Avalon), ports (Port of Melbourne), rail terminals and freight and logistics warehousing and distribution centres.

It is clear that the WAGA region is an important hub for freight and logistics, with around half of the overall transport emissions for the region coming from freight.

As shown below, the total emissions attributed to transporting people and freight (2012) in the WAGA region is estimated to be around 4,490 ktCO<sub>2</sub>-e, or 26% of the region's overall emissions. This sector focuses on reducing emissions in the areas of residential transport and freight.



Low Carbon West sets four main actions in the transporting people and freight sector to reduce GHG emissions. These actions can be coordinated through the following two programs:

1. Tackling residential transport emissions
2. Tackling freight emissions

Transporting people and freight action descriptions	Emissions benefit (ktCO <sub>2</sub> -e)
Establish a regional network of freight businesses and implement a voluntary program for freight companies to track and reduce emissions	172
Establish (or extend) a formal car-share scheme in the region.	16.7
Implement a carpool matching program for residents, either online or via development of an app.	10.0
Advocate for establishing a freight consolidation centre in the region, specifically the Western Interstate Freight Terminal (WIFT)	-1130*

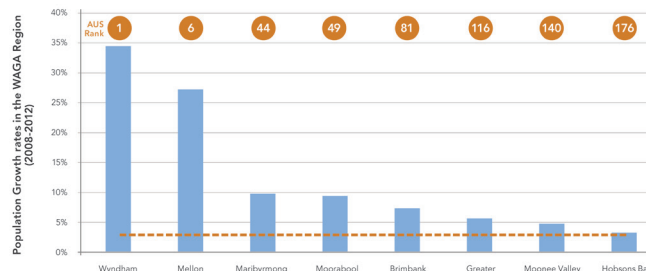
\* Note that the WIFT would deliver an environmental benefit at a Victorian and national level but will increase emissions within the WAGA region.

It is not likely that all emissions growth from transport in the WAGA region can be offset through regional actions alone. Project partners will also need to advocate at federal and international level to support major infrastructure upgrade, vehicle efficiency and behaviour change.

## URBAN GROWTH AND DEVELOPMENT

The changes in land use and the efficiency of new built form will fundamentally affect the WAGA region's transition to a low carbon economy.

The WAGA region is experiencing rapid growth in residential population and dwellings, with up to 180,000 new homes required by 2031. As shown in the figure below, a number of suburbs in the WAGA region are amongst the fastest growing suburbs in the nation. Over this period, emissions from the residential sector are expected to increase by around 1,200 ktCO<sub>2</sub>-e.



In terms of emissions, the urban growth and development sector makes up around 65% of total emissions in 2012 and 2020, and these are expected to increase by 1,800 ktCO<sub>2</sub>-e. As the WAGA region will experience tremendous growth between 2012 and 2020, building energy standards are a key lever for this strategy.

These actions can be coordinated through the following programs:

1. Implementing planning conditions and incentives
2. Supporting building integrated actions
3. Enhancing waste diversion programs

Urban growth and development action descriptions	Emissions benefit (ktCO <sub>2</sub> -e)
Create bulk-buy schemes for solar PV panels to be installed in new non-residential buildings	853
Promote sustainability measures to the community through the Urban Sustainability Atlas, particularly for new buildings to identify opportunities for solar PV installations	12.6
Implement planning scheme requirements for high performance buildings / Advocate for reforms to improve national building standards (such as the National Construction Code)	41.3
Run recycling promotion and education programs, to consolidate and build upon current programs	38.4
Implement organic waste diversion and compost distribution back to households	27.3
Implement a 'Cool Roofs' program	31.8
Provide planning benefits or incentives for high performance building applicants	1.7
Implement planning scheme requirements for high performance buildings, and advocate for reforms to improve national building standards	1.3

## EMISSIONS REDUCTIONS

Low Carbon West provides a comprehensive suite of actions for limiting the growth of greenhouse gas emissions across the WAGA region to 2020.

The 20 proposed actions (excluding the freight consolidation centre) are projected to result in an emissions benefit of approximately 2,700 ktCO<sub>2</sub>-e per annum by 2020. This equates to an actual decrease in emissions of approximately 2.5% by 2020, compared to the 2012 baseline (refer to right image). This reduction is achieved as the population and number of dwellings in the WAGA region increase by approximately 20% by 2020.

## A PLAN FOR IMPLEMENTATION

While WAGA has primary responsibility for Low Carbon West, its implementation will require input and action from all member councils with the support of its project partners.

Low Carbon West provides the foundation material to start the necessary conversations with those who have the ability to enact required change to achieve the emission reductions detailed in the strategy. Therefore, resources must be allocated to review the implementation process and to ensure that lessons are learnt regarding the successful implementation of initiatives. An adequately resourced and secure platform is crucial to the success of the strategy.

The previous pages summarise the actions proposed by Low Carbon West, co-ordinated by programs directed at particular audiences. These actions and programs also need to be supported by the following principles:

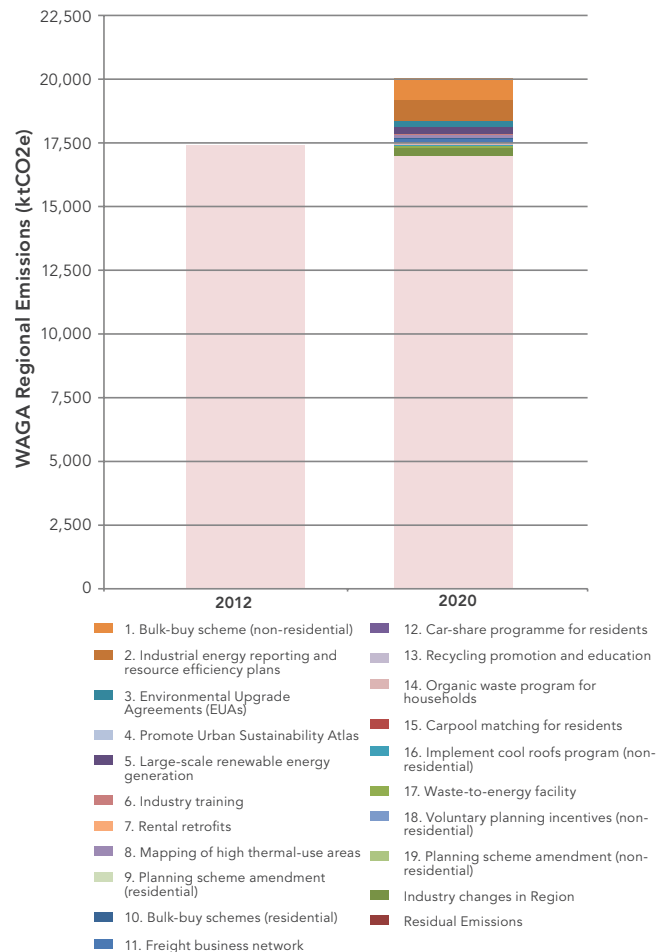
**Prototyping and market testing:** If the actions are not what the community or the market require, then they will not be successful. Extensive consultation with the key stakeholders, in conjunction with prototyping and pilot programs, should be enacted to ensure that the actions will achieve the desired response and success. This should be an iterative process, with a closed loop of feedback.

**Avoiding duplication:** Before any particular action is enacted, consultation and research should be undertaken to have a full appreciation of any potential duplication or similarities with other local or regional initiatives. The identification of overlap could reduce the costs and resources.

**Communications and consultation:** From engaging with businesses, industry and government, to the local community and environment groups, communications and consultation is necessary to create buy in and propagate the initiatives contained within Low Carbon West.

**Measuring success:** A monitoring plan will be developed by sector, with key performance indicators (KPIs) based on the framework for prioritisation of actions within Low Carbon West.

WAGA looks forward to working with industry, council and community to implement this strategy to support growth in the region, whilst limiting the increase of greenhouse gas emissions.



For further information about Low Carbon West and WAGA, please contact:

**Fran Macdonald**  
 WAGA Coordinator | Sustainable Development  
 T: (03) 8734 5485  
 E: fran.macdonald@wyndham.vic.gov.au

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